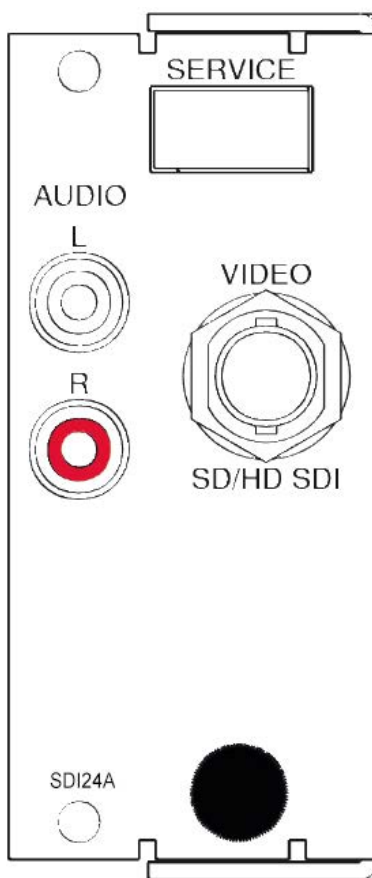




SDI24A High-Definition Encoder

Instruction Manual



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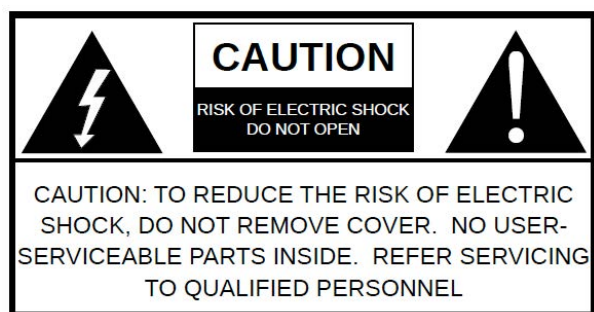
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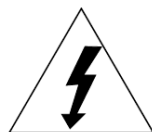
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Caution Statements:

WARNING: TO PREVENT FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE TO RAIN OR MOISTURE



A product and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the product and cart combination to overturn.



The lightning flash with arrow head symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.
DO NOT OPEN THE CABINET, REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES, NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

Important Safety Instructions:

1. **Read Instructions:** All the safety and operating instructions should be read before the product is operated.
2. **Retain Instructions:** The safety and operating instructions should be retained for future reference.
3. **Heed Warnings:** All warnings on the product and in the operating instructions should be adhered to.
4. **Follow Instructions:** All operating and use instructions should be followed.
5. **Cleaning:** Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleansers. Use a damp cloth for cleaning.
6. **Attachments:** Do not use attachments that are not recommended by the product manufacturer as they may cause hazards.
7. **Water and Moisture:** Do not use this product near water—for example, near a bathtub, wash bowl, kitchen sink or laundry tub; in a wet basement; or near a swimming pool; and the like.

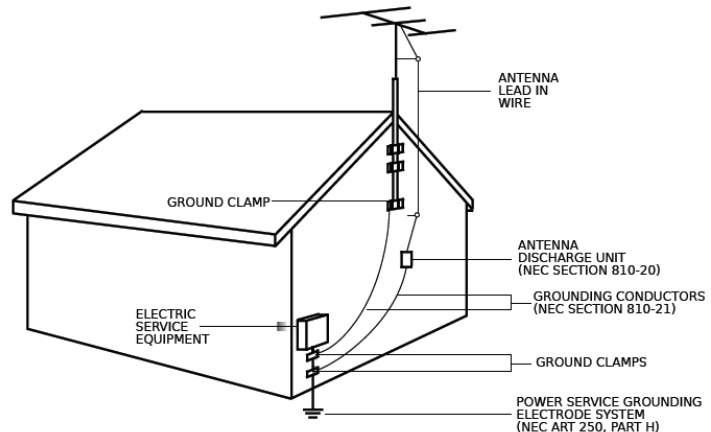
8. **Accessories:** Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
9. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.
10. **Ventilation:** Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or similar surface. This product should not be placed in a built-in installation such as bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
11. **Power Sources:** This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
12. **Grounding or Polarization:** This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug. Alternate Warnings – If this product is equipped with a three-wire grounding-type plug, a plug having a third (grounding) pin, the plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.
13. **Mise à la terre ou Polarisation:** Cet appareil est équipé avec un cordon d'alimentation à trois fils. Il est à brancher sur une prise ayant un connecteur à la terre. Assurez-vous que la connection à la terre ne manque pas.
14. **Power-Cord Protection:** Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
15. **Lightning:** For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.
16. **Power Lines:** An outside antenna system should not be located in the vicinity of overhead power lines, other electric light or power circuits, where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them may be fatal.
17. **Overloading:** Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.
18. **Object and Liquid Entry:** Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
19. **Servicing:** Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
20. **Damage Requiring Service:** Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a) When the power-supply cord or plug is damaged,
 - b) If liquid has been spilled, or objects have fallen into the product,
 - c) If the product has been exposed to rain or water,
 - d) If the product does not operate normally by following the operating instructions.

Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation, e. If the product has been dropped or damaged in any way, and f. When the product exhibits a distinct change in performance—this indicates a need for service.

21. **Replacement Parts:** When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutes may result in fire, electric shock or other hazards.
22. **Safety Check:** Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
23. **Wall or Ceiling Mounting:** The product should be mounted to a wall or ceiling only as recommended by the manufacturer.
24. **Heat:** The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

NOTE TO CABLE INSTALLER:

THIS REMINDER IS PROVIDED TO CALL THE CATV SYSTEM INSTALLER'S ATTENTION TO ARTICLE 820-40 OF THE NEC THAT PROVIDES GUIDELINES FOR PROPER GROUNDING AND, IN PARTICULAR, SPECIFIES THAT THE CABLE GROUND SHALL BE CONNECTED TO THE GROUNDING SYSTEM OF THE BUILDING, AS CLOSE TO THE POINT OF CABLE ENTRY AS PRACTICAL.



NEC - NATIONAL ELECTRICAL CODE

Example of antenna grounding as per National Electrical Code, ANSI/NFPA 70

4 Introduction / Setup / Operation

Introduction

The Drake® SDI24A high-definition encoder generates an MPEG2 or MPEG4 H.264 video stream, with Dolby® Digital or MPEG1 layer 2 audio. This module is designed to be installed into the Drake EH24 chassis, which provides the control and output interfaces to the unit. The encoder accepts SD-SDI and HD-SDI inputs with embedded PCM audio or separate analog audio.

Installation

This unit installs into the chassis in the same fashion as the SDE24 and HDE24 encoders; for chassis insertion instructions, see the manual for your chassis. **DO NOT INSERT THIS ENCODER WITH POWER APPLIED TO THE CHASSIS - RESULTING DAMAGE WILL NOT BE COVERED BY THE LIMITED WARRANTY.** Cable the inputs appropriately (see the Rear Panel Connections section for details).

Upgrading Firmware

The SDI24A's firmware may be upgraded in the field, using a removable USB flash drive. Once you have obtained the latest firmware version file, copy the file onto a removable flash drive. The file must not be placed in any sub-folder of the drive. Power down the chassis, insert the flash drive into the Service port on the unit, and apply power to the chassis. The SDI24A will automatically upgrade and then reboot. Once the unit is functioning normally again (encoded audio and video is being generated), remove the flash drive from the unit.

Operation

Power on the chassis, and select the newly-inserted SDI24A unit via the LEFT and RIGHT buttons on the front panel. The following configuration settings are available for the SDI24A (defaults listed in bold italics):

Resolution: *Scan, 1080i@30Hz, 720p@60Hz, 720p@50Hz, 576i, 480i* - auto-scan input resolution, or a force particular video mode. In normal operation, this should be set to Scan.

Format: *MPEG2, MPEG4 H.264* - sets the video

compression method used

MPEG4 Profile: *Default, Simple, Advanced Simple* - sets the MPEG4 video profile used (only available when format is MPEG4 H.264)

MPEG4 Level: *0, 1,2, 3, 4, 5* - sets the MPEG4 encoding level (only available when format is MPEG4 H.264)

Video Rate: *Range varies by resolution* - sets the bandwidth used by the video encoder (**15.0 Mbps**)

Audio Source: *Embedded, Analog* - select audio input source

Audio Encode: *Digital, MP2* - changes audio encode format between Dolby® Digital and MPEG1 Layer 2

Audio Rate: *320kbps, 384kbps, 128kbps, 192kbps* - sets the bandwidth used by the audio encoder

NOTES:

1. If the front panel display shows *INVALID VIDEO*, the incoming video is not correct (either no video is present, or the resolution settings are incorrect).
2. This encoder will only support the specific video resolutions outlined in the Specifications table.
3. Firmware updates may be required for EH24 chassis. EH24's must be updated to v3.0 or later.

Dolby and the double-D symbol are registered trademarks of Dolby Laboratories.

VIDEO INPUTS

| | |
|-----------------------|-------------------------------|
| SD-SDI/HD-SDI: | 1x75-ohm HD-SDI capable input |
|-----------------------|-------------------------------|

AUDIO INPUTS

| | |
|----------------------------|--|
| RCA-type L+R: | 1x 1Vrms nominal, 3.5Vrms maximum |
| SDI Embedded Audio: | Supports PCM (uncompressed) digital audio from SDI |

VIDEO OPTIONS

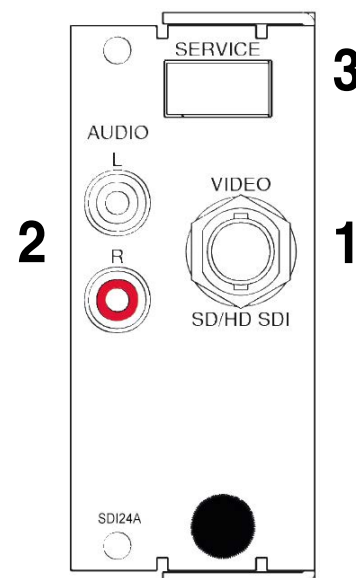
| | |
|-------------------------------------|--|
| Input Video Modes Supported: | 480i (720x480 @ 30fps) 576i (720x576 @ 25fps) 720p@60Hz (1280x720 @ 60 fps) 1080i@30Hz (1920x1080 @ 30fps) 1080p@25Hz (1920x1080 @ 25fps) Supports auto-scan for input resolution |
| Encoder Format: | MPEG2 or MPEG4 H.264 |
| Video Adjustments: | Brightness, contrast, hue, and saturation |
| MPEG4 Profile support: | Simple, Advanced Simple, High |
| Bitrate: | Up to 19Mbps (depends on input format) |
| Closed Captioning: | Supports Closed Captioning extraction of either EIA-608 or EIA-708 embedded data. |

AUDIO OPTIONS

| | |
|------------------------|--------------------------------|
| Encoder Format: | Dolby Digital or MPEG1 layer 2 |
| Output Bitrate: | 128, 192, 320, 384kbps |

Rear Panel Connections

- 1: SD-SDI/HD-SDI input
- 2: Analog audio input.
- 3: Service port. Used during firmware updates of unit.



Three Year Limited Warranty

R.L. DRAKE HOLDINGS LLC warrants to the original purchaser this product shall be free from defects in material or workmanship for three (3) years from the date of original purchase.

During the warranty period R.L. DRAKE HOLDINGS LLC or an authorized Drake service facility will provide, free of charge, both parts and labor necessary to correct defects in material and workmanship. At its option, R.L. DRAKE HOLDINGS LLC may replace a defective unit.

To obtain such a warranty service, the original purchaser must:

1. Retain invoice or original proof of purchase to establish the start of the warranty period.
2. Notify R.L. DRAKE HOLDINGS LLC or the nearest authorized service facility, as soon as possible after discovery of a possible defect, of:
 - a) the model and serial number,
 - b) the identity of the seller and the approximate date of purchase; and
 - c) A detailed description of the problem, including details on the electrical connection to associated equipment and the list of such equipment.
3. Deliver the product to R.L. DRAKE HOLDINGS LLC or the nearest authorized service facility, or ship the same in its original container or equivalent, fully insured and shipping charges prepaid.

Correct maintenance, repair, and use are important to obtain proper performance from this product. Therefore carefully read the Instruction Manual. This warranty does not apply to any defect that R.L. DRAKE HOLDINGS LLC determines is due to:

1. Improper maintenance or repair, including the installation of parts or accessories that do not conform to the quality and specifications of the original parts.
2. Misuse, abuse, neglect or improper installation.
3. Accidental or intentional damage.

All implied warranties, if any, including warranties of merchantability and fitness for a particular purpose, terminate three (3) years from the date of the original purchase.

The foregoing constitutes R.L. DRAKE HOLDINGS LLC'S entire obligation with respect to this product, and the original purchaser shall have no other remedy and no claim for incidental or consequential damages, losses or expenses. Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusions or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state. This warranty shall be construed under the laws of Ohio.

For Service, contact:

R.L. DRAKE HOLDINGS LLC
710 Pleasant Valley Drive
Springboro, Ohio 45066. USA
Customer Service and Parts Telephone: +1 (937) 746-6990
Telefax: +1 (937) 806-1510
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